on the COVER

A native Carolina anole *lizard lurks through an Everglades cypress swamp.*

Agriculture is the predominant land use in the Everglades Agricultural Area with more than 500,000 acres used for growing sugar cane, vegetables and sod.

A 10-foot alligator sizes up but ignores the new underwater video equipment used to assist the District dive team to safely inspect water control structures.

PHOTO COURTESY VIDEORAY

A DAY AT THE DISTRICT

with... The Dive Team

New technology makes underwater inspections safer

It can be a beastly job. Inspecting and repairing underwater structures may mean diving into a canal with a 'gator looking on, dipping into confined areas ready to put you in the squeeze, or using a sixth sense for navigating through murky water. Sometimes a diving team's job is long and tedious. Sometimes precarious. And sometimes just a little short of curious.

The six members of the West Palm Beach Field Station dive team have 100-plus years of solid diving experience between them and probably just about as many good stories to tell. Team members include Chris Holling, James Binns, Duane Smith, Doug Updike, Richard Malone and Bob McIntosh. But now the team has added a new technology that can make their day a little easier.

UNUSUAL DIVES

A typical diving assignment may mean inspecting 150 culverts, underwater, in a six-week period or inspecting a pump bay to check out pump bearings and impellers. However, on a muggy day in August, their assignment was not the usual – they had been called in to coordinate with the Palm Beach County Sheriff's Office to locate a stolen vehicle, which had reportedly been deep-sixed in the Miami Canal.

Typically, four to five members of the dive team are needed for an assignment where the diver will be tethered to an umbilical cord, which provides the diver with oxygen and a system of communication. "Before every assignment, the dive supervisor holds a pre-dive meeting where strategies and safety precautions are discussed," said Duane Smith, who would be the in-charge guy for the day. "You need someone to dive, a stand-by to go in after him in case of an emergency, a line-tender, and the dive supervisor."

MEET ROV

Today's task would be a little different – both from the standpoint of the unique job assignment and because they would be using the new technology to make a preliminary inspection. The District recently purchased remotely operated vehicles (ROVs) for underwater surveillance. The system consists of the small ROV attached by a long data cable to a control panel with a video screen – all of which could be neatly packed up into a couple of wicker baskets. But the work is more serious than a picnic at the beach.

"The remote unit is basically another set of eyes," said District structure maintenance coordinator Robert Baskin. "Our divers have developed a sense of sight where visibility in our waterways can sometimes be little to none. Now they can rely on the ROV's set of eyes for making inspections."

A District diver goes down into murky canal water to inspect underwater pump station equipment with the assistance of a second pair of eyes – a remotely operated vehicle or ROV.

SAFETY TOPS ADVANTAGES OF VIDEO INSPECTION

The equipment provides a number of advantages. When only an inspection is needed, the assignment becomes a two-man operation, one man to sit at the control panel and another to guide the line as the vehicle travels through the water. Also, the District does not have the added expense of hiring an alligator trapper to be on hand as is required for team dives. And, the biggest plus is that the ROV can make inspections in confined areas, such as culverts, that can become hazardous spots for the dive team.

The divers do both scuba diving and surface air supply diving. Every four years, they attend training in the Florida Keys to learn about new technology and safety procedures. "This is the only training school in South Florida," Smith said.

"Our divers are entrusted with a large responsibility in helping to discover, define and document deterioration of our water control structures," said Alex Damian, field operations director of the District's central region. "Now they have an important new tool to help with that mission, and with this new technology we're establishing a historical, video-inspection record that will be available long after we're gone."

So what was the outcome of the day's adventure? While they saw fish swimming on the ROV's control monitor and heard a shout of "big fish" from the diver who went down later, no car was located.

Summertime Slime

Focus on the blue-green algae phenomenon

The summer of 2005 may be remembered as one of the warmest in southern Florida as well as in other parts of the country. But, it also may be remembered as the summer of slime in some of our waterways, or, more accurately, blue-green algae.

As local media coverage of this summer's blue green algae blooms focused on our region, blue-green algae blooms were occurring and continue to happen throughout Florida and in other areas across the country.

WHAT ARE BLUE-GREEN ALGAE?

Blue-green algae are natural to the environment as part of the food chain and are found all over the world. They are not unique to South Florida Water Management District water bodies. They are also common throughout Florida as well as in other states, including Georgia, Texas, Alabama, Maryland, Virginia, Michigan, Oregon and others.

WHAT IS THE DISTRICT DOING ABOUT IT?

The blue-green algae blooms that are occurring in many of the District's water bodies are a concern for the agency. Our responsibility is to collect information and to share that information with all appropriate agencies and governments. We've implemented an expanded blue-green algae toxin monitoring program. Additionally, we are coordinating monitoring, evaluation and communication efforts with local, county, state and federal agencies, including the Florida Department of Health as they are the experts in determining any impacts to public health.

WHAT CAUSES BLUE-GREEN ALGAE TO BLOOM?

Blue-green algae multiply quickly in water bodies with high nutrient levels such as phosphorus, particularly when the water is warm and the weather is calm, like the conditions we're experiencing this summer. This proliferation causes "blooms" of floating blue-green algae that turn the water green. These three ingredients – warm water, calm weather and high levels of nutrients – are presently fueling the blooms in our area.

WHERE ARE THE BLOOMS NOW?

As of Aug. 31, blooms are in Lake Okeechobee, the St. Lucie River/Estuary, the Caloosahatchee River and the Upper Kissimmee Chain of Lakes. Blooms are also occurring in other Florida water bodies outside of the District jurisdiction such as the St. Johns River near Jacksonville. Blue-green algae blooms were also reported this summer in Lake Huron, Michigan, and Odell Lake in Oregon.

IS IT TOXIC AND A HEALTH RISK TO HUMANS?

Some – not all – species of blue-green algae can produce toxins that can affect public health. Those blue-green algae that are known to produce toxins, do not always do so. Little is known about the environmental conditions that trigger toxin production.

The blooms in District waterways are caused by blue-green algae called *Mycrocystis*. This blue-green algae is not always toxic but can form toxic strains. Information regarding blue-green algae toxins and risks to humans, fish and wildlife is very limited. Currently, there are no established state or federal guidelines for standard toxic levels of concern.

CAN BLOOMS CAUSE FISH KILLS?

Blue-green algae blooms that last more than a few months can be harmful to lake/river ecosystems and cause fish kills because of the decrease in oxygen levels and direct ingestion in the food chain.

CAN BLOOMS BE TREATED?

No. The Florida Fish and Wildlife Conservation Commission does not recommend treatment because it may release the toxins. Blooms can last days, weeks or months, depending on conditions; the blooms will dissipate naturally when conditions change.

For more information and updates, visit www.sfwmd.gov and click on the "Blue-Green Algae" icon.